

WHAT IS CLAIMED IS:

1. A containment plenum adapted to deliver laser light to an interaction region of an inhabitable structure to remove material from the structure, the containment plenum comprising:

a plenum housing adapted to be coupled to a source of laser light;

a window substantially transparent to the laser light, the window mounted within the plenum housing to transmit the laser light in a downstream direction and to provide a barrier to upstream transport of particulate matter generated by interaction of the laser light and the structure;

a nozzle fluidly coupled to a source of compressed gas, the nozzle mounted downstream of the window whereby the laser light and the compressed gas are transmitted through the nozzle in the downstream direction to the interaction region of the structure; and

a resilient interface coupled to the plenum housing and adapted to resiliently contact the structure and to substantially surround the interaction region, thereby confining the material and removing the material from the interaction region.

2. The containment plenum of Claim 1, wherein the plenum housing is either air-cooled or water-cooled.

3. The containment plenum of Claim 1, wherein the window is mounted in a removable assembly within the plenum housing.

4. The containment plenum of Claim 1, wherein the window focuses the laser light.

5. The containment plenum of Claim 1, wherein the window provides a surface against which the compressed gas exerts pressure.

6. The containment plenum of Claim 1, wherein the nozzle comprises copper.

7. The containment plenum of Claim 1, wherein the nozzle is either air-cooled or water-cooled.

8. The containment plenum of Claim 1, wherein the resilient interface facilitates blocking sound from escaping outside the containment plenum.

9. The containment plenum of Claim 1, wherein the resilient interface facilitates blocking the laser light from escaping outside the containment plenum.

10. The containment plenum of Claim 9, wherein the containment plenum further comprises an extraction port in fluid communication with the interaction region, the extraction port adapted to extract the material from the containment plenum.

11. The containment plenum of Claim 10, wherein the extraction port is fluidly coupled to a vacuum generator adapted to generate a vacuum to pull the material from the containment plenum.

12. The containment plenum of Claim 1, wherein the resilient interface comprises a wire brush.

13. A containment plenum adapted to deliver laser light to an interaction region of an inhabitable structure to remove material from the structure, the containment plenum comprising:

means for coupling the containment plenum to a source of laser light;

means for transmitting the laser light through the containment plenum in a downstream direction to the interaction region;

means for inhibiting upstream transport of particulate matter generated by interaction of the laser light and the structure; and

means for confining the material and removing the material from the containment plenum.

14. A method of irradiating an interaction region of an inhabitable structure with laser light to remove material from the structure, the method comprising:

coupling a containment plenum to a source of laser light;

transmitting the laser light through the containment plenum in a downstream direction to the interaction region;

inhibiting upstream transport of particulate matter generated by interaction of the laser light and the structure; and

confining the material and removing the material from the containment plenum.